EXHIBIT V

TESTIMONY OF MARK J. BUBEL, SR.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

AQUA PENNSYLVANIA WASTEWATER, INC.

DOCKET NO. A-2021-3027268

AQUA STATEMENT NO. 2

DIRECT TESTIMONY OF
MARK J. BUBEL, SR.

With Regard To
Description of the System
Environmental Compliance
Integration into Current Operations
Technical Fitness
Public Benefits of the Transaction

August 2021

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Mark J. Bubel, Sr. My business address is 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010.

Q. By whom are you employed and in what capacity?

A. I am employed by Aqua Pennsylvania, Inc. ("Aqua PA"), as a Project Engineer III.

Q. Please provide a brief description of your education and work experience.

A. I received a Bachelor's of Science Degree (B.S.) in Civil Engineering in 1980 from Lehigh University and a Master's Degree in Civil Engineering (M.C.E.) with a concentration in Environmental Engineering in 1983 from Villanova University. I have worked in various engineering roles and have over 40 years of experience in environmental engineering related to municipal and industrial wastewater treatment and operations. I have worked for Essential Utilities, Inc. (formerly Aqua America, Inc.) subsidiaries since 2003 in roles related to wastewater treatment facilities including planning, design, start-up, and operational troubleshooting. I am a Registered Professional Engineer in Pennsylvania, Delaware, Maryland, North Carolina, and Florida. I am also a Licensed Water and Wastewater Operator in Pennsylvania.

Q. Have you previously testified before the Pennsylvania Public Utility Commission ("PUC" or the "Commission")?

A. Yes. I provided testimony in Aqua Pennsylvania Wastewater, Inc.'s ("Aqua" or the "Company") New Garden, Limerick, East Bradford, Cheltenham, East Norriton, Delaware County Regional Water Quality Control Authority, Lower Makefield, and East Whiteland Section 1329 application proceedings at Docket Nos. A-2016-2580061, A-2017-2605434, A-2018-3001582, A-2019-3008491, A-2019-3009052, A-2019-3015173, A-2021-3024267, and A-2021-3026132, respectively. I also provided testimony in Aqua PA and Aqua's most recent base rate case proceedings at Docket Nos. R-2018-3003558 and R-2018-3003561.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is as follows: (1) to provide a general description of the acquired system; (2) to explain how the acquired system will be integrated into Aqua's operations; (3) to describe Aqua's technical fitness to run the system; and (4) to discuss the public benefits of the proposed transaction ("Proposed Transaction") between Aqua and Willistown Township ("Willistown" or the "Township").

Q. Are you sponsoring any Exhibits with your testimony?

A. No.

II. OVERVIEW OF THE PARTIES' OPERATIONS

Q. Please provide a general overview of Aqua's wastewater operations.

A. Aqua, a subsidiary of Aqua PA, is engaged in the business of collecting, treating, transporting, and disposing of wastewater for the public. Aqua serves approximately

45,000 customers in Adams, Bucks, Carbon, Chester, Clarion, Clearfield, Delaware, Lackawanna, Luzerne, Monroe, Montgomery, Pike, Schuylkill, Venango, and Wyoming Counties. Aqua operates 39 wastewater treatment plants ("WWTP") throughout the Commonwealth of Pennsylvania, and 24 systems of Aqua's Southeast Division are in proximity to Township allowing for operational efficiencies. Aqua, and its parent company Aqua PA, have approximately 600 employees bringing extensive expertise in providing water and wastewater service to citizens of Pennsylvania.

Q. Please provide a description of the Willistown Sanitary Wastewater Collection and Treatment System (the "System").

A. The Township is located in Chester County, Pennsylvania and the majority of the Township is served by a public sewer system. The System is a collection, conveyance, and treatment system owned by Willistown with approximately 26 miles of gravity sewer collection mains, ranging in size from 8 inches to 18 inches in diameter, and approximately 14 miles of force mains in sizes ranging from 1.5 to 14 inches in diameter. The Township also owns 6 pump stations, and 2 booster pump stations.

The Township also owns the Penn's Preserve wastewater treatment plant ("WWTP"), which treats wastewater to a small community system. The Penn's Preserve WWTP has a permitted capacity of 0.045 million gallons per day ("MGD"). The majority of Willistown's sewage is treated by the Valley Forge Sewerage Authority ("VFSA") at its WWTP located in Schuylkill Township, Chester County.

Willistown accepts flows into the System from users on the borders of Willistown, including from neighboring municipalities: Borough of Malvern ("Malvern"), East Goshen

Township ("East Goshen"), and East Whiteland Township ("EWT"). While most flows from these users flow to the VFSA WWTP for treatment, some flows sent to East Goshen are treated at the East Goshen Municipal Authority ("EGMA") Ridley Creek WWTP or the West Goshen Sewer Authority ("WGSA") WWTP.

Description of the System

The VFSA treatment plant began treatment of wastewater in about January 1978. The plant receives flow from the contributing municipalities from two force mains. Flow from the two force mains combines immediately prior to the raw influent structure. The raw influent structure meters and diverts the flow into two primary clarifiers, which are operated in parallel, for gravity settling to remove heavy inorganic and organic solids as well as to reduce biochemical oxygen demand ("BOD_5"). Following the primary clarifiers, further reduction of BOD_5 sufficient to also allow nitrification, occurs biologically in the two activated sludge aeration tanks. Final settling is achieved following the aeration tanks in four final clarifiers also operated in parallel. The final treatment step prior to discharge to the Schuylkill River is ultraviolet light ("UV") disinfection.

Wastewater solids produced during primary clarification are pumped through cyclone de-gritters where grit is removed from the wastewater, sent to one of three treatment plant gravity thickeners where it is combined with other plant solids (scum, trucked wastewater and waste activated sludge).

In addition to its connected customers, VFSA also receives regulated and non-regulated (residential) trucked waste at a designated receiving station for preliminary treatment and equalization prior to combination with other plant solids in gravity thickeners. The gravity thickened solids produced in the sludge thickeners are pumped to

centrifuges for dewatering. The resulting cake solids produced by the centrifuge dewatering process are alkaline stabilized by mixing dewatered sludge solids with hydrated lime, resulting in a biosolids product registered with the Pennsylvania Department of Agriculture as a fertilizer product. VFSA biosolids have been land applied for over 10 years for beneficial agricultural reuse.

The VFSA WWTP is permitted at an annual average flow of 11.75 million gallons per day ("MGD") and has a maximum monthly average flow of 11.75 MGD. The 2020 annual average flow was 6.8 MGD and the 3-month maximum average flow was 7.42 MGD. The WWTP is permitted for a maximum organic loading of 26,700 pounds per day (lbs./day) according to the Pennsylvania Department of Environmental Protection ("DEP") Water Quality Management Permit ("WQM") provided as Exhibit M2. The 2020 maximum month organic loading was 12,830 lbs./day.

The Penn's Preserve WWTP is an aerated lagoon treatment system, consisting of a manual bar screen headworks, a two-cell treatment lagoon, storage/polishing lagoon, and effluent spray pumps. Sewage flow to the treatment lagoon is continuous, going through aeration, solid-liquid separation settling, and decanting processes. The treated water is discharged through a gravity main to the storage/polishing lagoon. The supernatant of the storage/polishing lagoon is chlorinated prior to being pumped out for spray irrigation disposal. The treated WWTP effluent is spray irrigated on two (2) spray zones located in a field area on the east side of the Okehocking Preserve. The Penn's Preserve WWTP is permitted at an annual average flow of 0.045 MGD and has a maximum monthly hydraulic flow of 0.045 MGD. The 2020 annual average flow was 0.032641 MGD and the 3-month maximum average flow was 0.03577 MGD. The WWTP is permitted for a maximum

organic loading of 83.5 lbs./day according to the DEP WQM provided as Exhibit M1. The 2020 maximum month organic loading was 124 lbs./day.

The EGMA WWTP is a sequencing batch reactor ("SBR") activated sludge treatment facility consisting of an influent grinder and screen, influent pumping station, 4-tank SBR system, post equalization tanks, effluent filtration, and UV disinfection prior to stream discharge to Ridley Creek. Solids treatment consists of the previously mentioned influent grinder and screen, aerobic sludge digestion, and a dewatering centrifuge with polymer addition. Screenings and dewatered sludge are hauled off site for disposal at a properly permitted solid waste landfill.

The EGMA WWTP is permitted at an annual average flow of 0.750 MGD and permitted at an annual average flow for the Applebrook golf course irrigation pond of 0.135 MGD. The EGMA WWTP has a design hydraulic capacity of 0.750 MGD and the lagoon has a design hydraulic capacity of 0.135 MGD for the subject golf course irrigation. Treated effluent from the WWTP is sent to the irrigation pond when requested by the golf course turf manager. The 2020 annual average flow was 0.461 MGD and the 3-month maximum average flow was 0.497 MGD. The EGMA WWTP is permitted for a maximum organic loading of 2,098 lbs./day. The 2020 maximum month organic loading was 1,123 lbs./day.

The WGSA WWTP is a combination trickling filtration / activated sludge wastewater treatment system. The plant's processes include the following: flow equalization, fine screening and vortex grit removal headworks, primary clarification, roughing trickling filters, activated sludge aeration tanks, secondary clarification, polishing clarification, and UV disinfection prior to stream discharge to Chester Creek (Goose Creek). The sludge

generated by the facility is anaerobically digested and dewatered using two belt filter presses. During 2020, a total of 479.1 dry metric tons of dewatered sludge was hauled to the Chester County Solid Waste Authority Landfill. Another 9.2 dry metric tons of liquid sludge was hauled to Pottstown WWTP for further treatment and ultimate disposal.

The WGSA WWTP is permitted at an annual average flow of 6.0 MGD. The WGSA WWTP has a design hydraulic capacity of 9.0 MGD. The 2020 annual average flow was 4.786 MGD and the 3-month maximum average flow was 5.229 MGD. The WGSA WWTP is permitted for a maximum organic loading of 17,514 lbs./day. The 2020 maximum month organic loading was 7,592 lbs./day.

The Willistown collection and transmission piping is summarized in the Engineering Assessment included as Exhibit D to the Application.

Q. Please provide the elevations[1] for the VFSA WWTP, the Penn's Preserve WWTP, the EGMA WWTP, the WGSA WWTP, and the Requested Territory.

A. VFSA WWTP: elevation generally varies between EL 90 to EL 105.

Penn's Preserve WWTP: elevation generally varies between EL 260 to EL 350.

EGMA WWTP: elevation generally varies between EL 365 to EL 380.

WGSA WWTP: elevation generally varies between EL 300 and EL 380.

Requested Territory: Area elevations vary generally from:

- EL 340 to EL 560 along the western boundary.
- EL 220 to EL 240 along the southern boundary.

[1] Elevation is approximate, and to the nearest two (2) feet interval based on PAMAP Program – Topographic Contours (2 ft Interval) 2006-2008 – DCNR PAMAP Program, https://www.pasda.psu.edu/uci/DataSummary.aspx?dataset=1245

- EL 310 to EL 410 along the northern boundary.
- EL 310 to EL 600 along the eastern boundary.

Willistown Pump Stations: Pump Station ("PS") elevations are approximately:

- PS 1, EL 456
- PS 2, EL 456
- PS 3, EL 414
- PS 4, EL 412
- PS 5, EL 232
- Dovecote, EL 462
- Booster Station 1, EL 392
- Booster Station 2, EL 435

Q. Please state the approximate time of the installation of the component facilities of the System.

A. With regard to the approximate time of the original construction, the VFSA WWTP was finished construction and placed in service in approximately January 1978 and provided basic primary treatment. The plant was upgraded in 2016 with a fourth clarifier as well as a third gravity thicker and a third centrifuge. A new influent fine screen was added in January 2020. The Penn's Preserve WWTP was constructed in the mid-1990s and provided basic aerated wastewater lagoon treatment and land application spray disposal of treated effluent. The EGMA WWTP was constructed in 1985 as an extended aeration treatment system and was upgraded and expanded to a sequencing batch reactor system in 2010.

The majority of the Willistown System was originally constructed in 1977 to 1978. The System was expanded in the ensuing decades as new developments were added to the System along with additional pump stations. However, the average age of the pipe in the Willistown System is approximately 44 years old.

Q. Is Aqua planning any capital projects over the next 10 years?

A. Yes. Aqua looked at upgrades to pump stations, force mains, and gravity collection systems based on facility conditions observed, facility age, and safety. Aqua estimates that it will invest approximately $3.3 million over the next 10 years.

Upgrades to pump stations include pump replacement, electrical and mechanical replacement, emergency generator replacement, as well as facilities upgrade. Force main replacement will occur based on pipe age. Gravity collection system pipe rehabilitation and replacement will occur based on an assessment of pipe age and condition. Aqua will work with Willistown and the DEP to address the inflow and infiltration ("I&I") and sanitary sewer overflows ("SSOs") within the system if they were to occur. There were no reported SSO's in 2020 as reported in the respective Chapter 94 Report for the respective system.

Q. Do you foresee any other projects that would be required in the immediate future?

A. Replacement and upgrade of facilities will continue beyond Aqua's 10-year capital plan based on facility age and expected facility life span.

Q. Please state the actual number of Willistown customers by class and gallons treated. Willistown has 2,294 customers. A breakdown of customers by customer group and gallons treated is shown in the table below:

Willistown Service Area	Gravity Sewer Customers	Low Pressure Sewer Customers	Penn's Preserve Sewer Customers	East Goshen Sewer Customers	Total
Number of Customers	1,694	385	195	20	2,294
Gallons Treated (January 1, 2020 to December 31, 2020)	123,965,800	22,065,300	11,957,400	712,500	158,701,000

Q. Are the acquired Willistown customers currently Aqua PA water customers?

A. Yes. Some of the Willistown wastewater customers are currently served by Aqua PA, other Willistown customers are served by private wells for water service.

III. ENVIRONMENTAL COMPLIANCE

Q. Does the Application include NPDES permits?

A. Yes, although not part of the System acquisition, the NPDES discharge permits for the VFSA, EGMA, and WGSA WWTPs are included in the Application as Exhibits N1, N2, and N3.

Q. Does the Application include WQM Permits?

A. Yes. The WQM Permit for the Penn's Preserve WWTP, issued in 2020 is included in the Application as Exhibit M1. Although not part of the System acquisition, the WQM permits issued for the VFSA, EGMA, and WGSA WWTPs are also included in the Application as

Exhibits M2, M3, and M4. The Application also includes WQM permits for pump stations 3, 4, 5, and Dovecote, and Booster Stations No. 1 and 2. The Township and DEP were unable to locate the WQM permits for Pump Stations No. 1 and 2, and have been in contact with DEP to have those permits reissued, which will then be transferred at closing.

Q. Are Act 537 plans included in the Application?

A. Yes. Willistown's current Act 537 plan is included in the Application as Exhibit P1. The Act 537 plan for the VFSA is included in the Application as Exhibit P2. The Act 537 Plans for East Goshen Township and West Goshen Township have been included in the Application as Exhibits P3 and P4, respectively.

Q. Are there any Notices of Violation ("NOV") issued to Willistown by the DEP in the last five years?

A. No. There were no NOVs issued to the Township in the last five years.

Q. Have there been any Consent Assessments of Civil Penalty ("CACP") entered into by the Township and the DEP?

A. No. There are no current CACPs entered into by the Township and the DEP.

Q. Please state if there are any current environmental compliance issues for the System.

A. There are no known environmental compliance issues for the System of which Aqua is aware.

Q. Please state the estimated number of future connections for the system for the next 5 years.

A. The below table provides projected equivalent dwelling units ("EDU") for the next five years (2021-2025):

	2021	2022	2023	2024	2025	Total
Willistown	1	13	13	13	0	40

Q. Is there present system capacity to meet the demands of current and future customers?

A. Willistown did not have any SSOs in 2020 per the Chapter 94 reports submitted by the Township. Willistown is not currently under a Corrective Action Plan ("CAP") or Connection Management Plan ("CMP").

The Penns Preserve WWTP system appears to be hydraulically overloaded; the Chapter 94 report also notes that an investigation was conducted and a connection between the stormwater system and the sanitary system was discovered in March of 2019 and which was removed. It appears this condition has been addressed.

The Penns Preserve system also notes an existing and projected organic overload condition. The Chapter 94 Report notes that the current influent water quality sampling condition may likely be the source of the reported organic overload condition due to the oversampling of oil and grease if the sampler is set too high. Although not noted, if the sampler is set too deep it may likely register a high total suspended solids which would result in a higher Carbonaceous Biochemical Oxygen Demand ("$CBOD_5$") result as well.

It is important to note that effluent water quality compliance has been generally in compliance thus suggesting that the system is in fact not overloaded. It would be Aqua's intent to conduct a paper re-rate of the treatment process permitted organic loading capacity.

IV. INTEGRATION OF THE SYSTEM, TECHNICAL FITNESS AND PUBLIC BENEFIT

Q. Please state how many miles the System is from Aqua's existing service territory.

A. Aqua already has an operational presence in the Township, where it serves customers through its Willistown Woods, Deerfield Knoll, and Plumsock wastewater systems (all of which are located less than 0.5 miles from the Penn's Preserve system and approximately 3 miles from the main Willistown system).

Q. Will the Willistown System be physically interconnected with Aqua's system or be operated as a standalone system?

A. The System will be operated as a standalone system within Aqua's footprint from its Southeastern Division Office in Bryn Mawr. The system is approximately 9 miles from the Company's Southeastern Division Office, located in Bryn Mawr, Pennsylvania.

Q. Please describe how Aqua will integrate the operation of the System into its current operations.

A. As noted above, the operation of the System will be managed from Aqua's Southeast Division office. Management, customer service, regulatory compliance, engineering,

financial, and ancillary services will be provided seamlessly from our Southeastern Division headquarters in Bryn Mawr. Mr. John M. Bright will be the assigned Certified Wastewater Operator for the System. Aqua plans to hire two additional operators to address the day-to-day needs of the Willistown system.

Q. Will other Aqua PA and/or Aqua employees assist in the operation of the System, if needed?

A. Yes. Aqua has 27 wastewater operators, many holding dual water and wastewater certifications, who may be called upon to assist in the operations of the System. These operators are also supported by Aqua PA employees, which will benefit customers through the provision of engineering and field service functions.

Q. Please explain the support services that Aqua Services, Inc. ("Aqua Services") will provide to the System.

A. Aqua Services, the Service Company for Essential, provides expertise in a variety of areas in support of the operations of Essential's subsidiaries, including Aqua. Aqua Services will provide support to the operation of the System through its employees' expertise in accounting and financial, administrative, communications, corporate secretarial, customer service and billing, engineering, fleet services, human resources, information systems, operations, regulatory compliance, rates and regulatory, risk management, water quality, legal, and purchasing, contracts and sales of real estate.

Q. Has Aqua planned any physical, operational, and/or managerial changes after closing?

A. As mentioned above, there are planned capital improvements and Aqua plans to hire 2 operators. There will be no other physical, operational, and/or managerial changes after closing.

Q. Is the System similar to other systems owned and operated by Aqua?

A. Yes. The System, as stated above, is a wastewater collection and treatment system. Aqua owns four other collection and treatment systems located within southeastern Pennsylvania.

Q. Do you believe that Aqua is technically fit to own and operate the System?

A. Yes.

Q. Please describe the Company's technical fitness and how the Company can provide quality and reliable service to Willistown wastewater customers.

A. Aqua PA and Aqua are Class A utilities that already have certificates to operate throughout the Commonwealth and have acquired many systems in the last three decades. Aqua will provide quality and reliable service to Willistown's customers given the Company's operational expertise as well as engineering support local to the System. Aqua has expertise in troubleshooting mechanical equipment as well as wastewater treatment processes. Aqua also has expertise in operating wastewater collection and conveyance systems. Aqua strives to ensure the treatment, collection, conveyance and pumping

systems which the Company owns provide continuous safe and reliable service. Aqua has worked with the Commission and statutory advocates to acquire and improve troubled wastewater systems (*e.g.,* Washington Park Wastewater, Docket No. A230550F2000).

In addition, the Commission appointed Aqua as receiver for the North Heidelberg Sewer Company system in Berks County effective March 5, 2018. Aqua took over daily wastewater operations of the facility, serving approximately 274 customers, and since that time has provided operations service and improvements to the system to ensure quality and reliable service.

Q. Does Aqua have emergency preparedness measures in place?

A. Yes. Aqua currently has emergency preparedness measures in place in order to ensure security and continued service in emergency circumstances all of which have been reviewed by the Commission.

Q. Please explain Aqua's safety programs.

A. Aqua and Aqua PA maintain safety programs that entail basic safety training in all the major categories, which operators and management personnel are required to complete, including but not limited to:

- Confined Space Training
- Back and Lifting Safety
- Work Zone Traffic Control
- Excavation Safety Awareness
- Fall Protection Training
- Hazard Communication
- Personal Protective Equipment
- Emergency Egress, Exits and Fire Safety
- Electrical Safety Training

- Control of Hazardous Energy | Lockout Tagout
- Respiratory Protection
- Hearing Conservation

Aqua's safety programs and procedures provide public benefits in that the Willistown customers will have a leader in the wastewater industry providing service.

Q. Can Aqua provide adequate wastewater collection, treatment, or disposal capacity to meet present and future customer demands?

A. Yes. Aqua can provide adequate wastewater service for present and future customers. Aqua will continue to make improvements to the System, as may be necessary, to ensure any future customer demands are met.

Although organically overloaded on paper, the Penn's Preserve WWTP has been in compliance with its WQM Permit. Further, the system has been built out for more than 15 years. It is not expected that this system will be a compliance issue for APW,

Q. Please summarize why you believe it is in the public interest for Aqua to own and operate the System.

A. My explanation of Aqua's current operations, the System's similarity to other systems operated by Aqua, the fact that it is located adjacent to three of Aqua's existing service territories, the additional support that will be provided by Aqua as an experienced wastewater utility, and my explanation of Aqua's technical fitness, all support a finding that Aqua's acquisition of the System is in the public interest.

V. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does. However, I reserve the right to supplement my testimony as additional issues and facts arise during the course of this proceeding.